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ABSTRACT

Before selecting any measurement instrument the test user should always determine what it is he wants to know. A new instrument, The Assessment of Career Development (ACD), attempts to assess students' knowledge about jobs. One must, however, determine whether the content of the ACD is similar to the content of the career information system the students are using to learn about these jobs. The paper presents the method of determining whether the content of the ACD was valid for measuring knowledge of job information if the job information system utilizes the Roe Occupational Classification. The paper provides the test user with the information needed to assess an information system (if employing Roe's classification) and, also, the method of determining the significant proportional differences of test content and criterion for any comparison. (Author)

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THE ASSESSMENT OF CAREER DEVELOPMENT: CONTENT VALIDITY WITH ROE'S OCCUPATIONAL CLASSIFICATION

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THE ASSESSMENT OF CAREER DEVELOPMENT: CONTENT VALIDITY WITH ROE'S OCCUPATIONAL CLASSIFICATION

The American College Testing Program (ACT) published a new instrument in the fall of 1973. The instrument, the Assessment of Career Development (ACD), was designed to be used with eighth through eleventh grade students for guidance assessment as part of a school's developmental career guidance program. In order to determine the value of using the ACD in a specific school, one must judge whether local student career guidance needs and objectives can be appropriately assessed by the ACD. The purpose of this study was to determine the content validity of the ACD subtest, "Occupational Awareness," for the evaluation of occupational information programs which use Anne Roe's (1955) Classification of Occupations. This study both presents the reader with: (1) a criterion for content validity of assessment (if the reader's career information program uses the Roe System) and (2) a strategy for determining content validity with other classification systems. Content validity is being defined as the property of a test to measure a certain criterion. The ACD, the Roe System of classification, and the method of determining content validity will be discussed in the following sections.

Description of ACD

The ACD is a guidance assessment instrument with two major purposes: first, to help counselors and administrators obtain information needed for developing effective guidance

programs; and second, to assess the outcomes of career guidance programs. The scales of the instrument are structured around three phases of career development: (1) occupational awareness (knowledge and exploration); (2) self-awareness, and (3) career planning and decision-making. The evaluation being presented deals solely with the first section, "Occupational Awareness." This section consists of seventy-two (72) multiple-choice questions designed to assess students' knowledge of occupational characteristics and occupational preparation requirements. Unit one is, in essence, an achievement test of the "world of work."

Baer and Roeber (1964) state that occupational information is an educational essential and, also, is essential for educational motivation and career decision-making. The "Job Knowledge" section of the ACD presents to the counselor an assessment tool which can aid in determining student career knowledge and needs for occupational information.

The information about jobs should be presented in some systematic method in order to facilitate student learning (Crites). For the purpose of example, the Roe occupational classification system was selected as a model system for ordering occupational information and demonstrating a method of determining content validity with the ACD.

Anne Roe's Classification of Occupations

Roe (1955) devised a two-dimensional system of occupational classification. Her system delimited the number of

job titles given in the Dictionary of Occupational Titles (DOT) to 650. After determining, through item analysis, the list of job titles to be classified, each job was then categorized using the two level code. The first number of the code indicated which of the eight job activity groups ("job clusters") the job represents. The "job clusters" and their code numbers are (1) Service, (2) Business Contact, (3) Organization, (4) Technology, (5) Outdoor, (6) Science, (7) General Cultural, and (8) Arts and Entertainment. The second number of the code represented the "level of function" for the job. The "levels of function" and their code numbers are: (1) Professional and managerial with independent responsibility, (2) Professional and managerial, (3) Semi-professional, (4) Skilled, (5) Semi-skilled, and (6) Unskilled. All 650 job titles were given a two-dimensional code number; for example, a barber was classified 1:4, meaning that the primary activity involves service to others while the functional level is a skilled worker. Occupational information systems employing the Roe Classification of Occupations employ the above described method.

There are many occupational information systems which categorize jobs according to Roe's classification. The Computerized Vocational Information System (CVIS) is the most widely-used program using the Roe classification. The remainder of the text presents the method and results of determining the content validity of ACD Occupational Awareness for assessing student knowledge of occupations. The assess-

ment is only useful for evaluating a program using the Roe system.

Method

In order to carry out the analysis, the job titles in the "Occupational Awareness" section of the ACD were coded according to the Roe classification system. Each item in the Unit was examined and each job title was classified according to the Roe system. All of the jobs were classified, including the distractors, until all 211 job titles were completed.

This analysis of occupations was first completed on the job clusters to determine the proportional content of the Roe list of jobs for each cluster. The number of jobs from each of Roe's clusters found in the ACD was compared to the total number of jobs for that cluster on Roe's list. A Z-test was used to determine if the two proportions were significantly different from each other (Edwards). An identical analysis was completed for analyzing the "levels of function." Edwards (1972) provided the formulas needed for the analyses.

Results

Of the 650 job titles listed by Roe, ACD "Job Knowledge" surveyed 221 of them. The percentage analysis is given in Table I. The comparison of percentage differences was completed using a Z-test. The level of significance was set at .05.

(INSERT TABLE I)

For the analysis of the "job clusters" there was only one significant percentage difference, that difference resulted from the ACD's minimal representation for "Technology" (cluster 4). The statistical treatment for each "job cluster" is demonstrated in Table II.

(INSERT TABLE II)

For the "levels of function" there was no significant percentage differences. The statistical treatment for each "level of function" is demonstrated in Table III. The results indicate the ACD is representative of thirteen of the fourteen job categories.

Conclusions

The conclusions reached from the analysis provides a rationale for career specialists wishing to use the ACD to assess their career guidance program. The subsection titled "Occupational Awareness" is generally representative of the Anne Roe Classification of Occupations and can, therefore, be used to assess students' knowledge of occupational characteristics and occupational preparation requirements for career information systems employing Roe's classification. Students learning about specific "job clusters" and "levels of function" can be validly assessed for each category except "Technology." One of the values of systematically providing job information is that a

flexible assessment program can be established. Counselors, career coordinators, and vocational teachers may effectively utilize the above strategy for establishing content validity for their assessment instruments. Any assessment instrument can be validated according to the method described. Any career information program attempting to use the ACD for assessment should complete this described analysis for determining the instruments content validity for assessing that program.

TABLE I

Percentage Comparison of ACD "Job Knowledge" with Anne Roe's Classification of Occupations

A. Comparison with "Job Clusters"

Cluster number	1	2	3	4	5	6	7	8	T
Number of jobs listed by Anne Roe	51	19	100	314	42	78	23	23	650
Percentage of the total for each "job cluster"	7.4%	3.0%	15.4%	48.3%	6.4%	12.0%	3.5%	3.5%	100
Number of jobs listed in ACD "Job Knowledge"	30	11	51	54	14	27	17	17	221
Percentage of the total for each "job cluster"	13.5%	4.9%	23.0%	24.4%	6.3%	12.2%	7.7%	7.7%	100

B. Comparison with "Levels of Function"

Level of Function Number	1	2	3	4	5	6	T
Number of jobs listed by Anne Roe	55	111	57	172	147	108	650
Percentage of the total for each level	8.5%	17.1%	8.8%	26.5%	22.6%	16.6%	100
Number of jobs listed in ACD "Job Knowledge"	19	53	25	55	41	28	221
Percentage of the total for each level	8.6%	23.9%	11.3%	24.9%	18.6%	12.7%	100

TABLE II

"Job Cluster" Analysis

"Job Cluster" Number	1	2	3	4	5	6	7	8
p1	.35	.38	.40	.66	.51	.49	.31	.31
p2	.65	.62	.60	.34	.49	.51	.69	.69
P	.10	.04	.19	.36	.06	.12	.06	.06
Q	.90	.96	.81	.64	.94	.88	.94	.94
n1	7.40	3.00	15.40	48.30	6.50	12.00	3.50	3.50
n2	13.50	4.90	23.00	24.40	6.30	12.20	7.70	7.70
S.D.	.14	.14	.12	.12	.13	.13	.15	.50
Z	-2.14	-1.71	-1.67	2.67	0.15	-0.15	-2.53	-2.53
Probability of Similarity	**	**	**	* 0.3%	44.0%	**	**	**

"Level of Function" Analysis

"Level of Function" Number	1	2	3	4	5	6
p1	.49	.42	.44	.52	.55	.57
p2	.51	.58	.56	.48	.45	.43
P	.085	.20	.10	.26	.21	.15
Q	.915	.80	.90	.74	.79	.85
n1	8.500	17.10	8.80	26.50	22.60	16.60
n2	8.600	23.90	11.30	24.90	18.60	12.70
S.D.	.13	.13	.13	.14	.12	.14
Z	-.15	-1.23	-0.92	.50	.83	1.00
Probability of Similarity	**	**	**	31.0%	21.0%	16.0%

* p < .01
** p > 100%

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